

Class 87/0

Weight tonnes 80

Brake force tonnes 40

ETH index 95

RA 6

Max speed mph 110

Weight In Working Order 83.3 tonn

Length Over Buffers 58' 6"

Width 8' 8 1/4"

Height Over Body 12' 4 1/4"

Height Over Pantograph (lowered) 13' 0 1/4"

Wheelbase 43' 6 1/8"

Bogie Wheelbase 10' 9"

Bogie Pivot Centres 32' 9"

Wheel Diameter 3' 9 1/2"

Maximum Speed 110 mph

Horsepower 5000

Maximum Rail Horsepower 7860

Maximum Tractive Effort 58000lb

Continuous Tractive Effort 21300lb at 87 mph

Brake Force 40 tons

From Wikipedia, the free encyclopedia

The **British Rail Class 87** is a type of **electric locomotive** built from 1973-75 by **British Rail Engineering Limited (BREL)**. 36 of these locomotives were built to work passenger services over the **West Coast Main Line (WCML)**. They were the flagships of British Rail's electric locomotive fleet until the late 1980s, when the **Class 90s** started to come on stream. The **privatisation of British Rail** saw all but one of the fleet transferred to **Virgin Trains** they continued their duties until the advent of the new **Pendolino** trains, when they were transferred to other operators or withdrawn. There is only one Class 87 still in use in Britain, and that is 87002, owned by the **AC Locomotive Group** but is solely used alongside 86101 for the occasional charter train. A large proportion of the fleet have now been exported to **Bulgaria**.

- Contents** [hide]
- 1 History
- 2 87101
- 3 British Rail service
- 4 Post-Privatisation service
 - 4.1 Virgin Trains
 - 4.2 EWS
 - 4.3 Cotswold Rail
 - 4.4 Direct Rail Services
 - 4.5 FirstGBRF
 - 4.6 Bulgaria export
- 5 Preservation
- 6 References
- 7 External links

[\[edit\]](#)

A requirement for more electric locomotives came about after the electrification of the WCML spread north from [Crewe](#) to [Preston](#), [Carlisle](#) and [Glasgow](#). Initially, three [Class 86](#) locomotives were used as test-beds to trial equipment (mainly electrical equipment and suspension) that would be used in the new locomotives; effectively, these locomotives were Class 87s in everything but appearance.

The external design of the Class 87 was clearly derived from that of the Class 86; the only major detail differences were two front cab windows on the 87 instead of the three of the 86, and also the lack of [headcode](#) indicator boxes; by 1973, visual recognition of train reporting numbers by signallers was no longer necessary. The 87s were also fitted with [multiple working](#) equipment which enabled locomotives to work with other members of the class (and some Class 86s) while controlled by one driver. Power output was also increased to 5000 hp in order to deal with the more demanding gradients on the northern half of the WCML such as [Shap Fell](#) and [Beattock Summit](#).

In the 1980s, the multiple working system was replaced with a new system based on [time-division multiplexing](#) (TDM) allowing 87s to work with other classes of locomotive (including most 86s, 90s and 91s) and most importantly, [Driving Van Trailers](#) (DVTs).



The unique Class 87/1, No.87101
Stephenson, in blue livery at Birmingham
International station in 1988

[edit]


Whilst the first 35 locomotives (numbered from 87001 to 87035, and known as Class 87/0) were identical, the 36th was numbered 87101 and had major equipment differences from the rest of the class. While the 87/0s were fitted with a traditional [tap-changer](#) transformer and [rectifiers](#), 87101 had a new [thyristor](#) power control system, and spent over a year on test before entering service in 1976.^[1] The locomotive, named *Stephenson*, worked the same services as the standard locomotives for many years, until British Rail was sectorised in the 1980s.

[edit]

The great majority of the Class 87s' workload came on express passenger services from [London Euston](#) to the North West and Glasgow. They did, however, see some use on freight, especially on heavy services that required two locomotives. In the late 1970s, British Rail named its entire Class 87 fleet, many receiving names previously carried by the "[Britannia](#)" [steam locomotives](#). The rest were named after towns, cities or counties along the WCML. In the 1980s, British Rail locomotives were allocated to separate sectors and the 87/0s were transferred to [InterCity](#) (which meant their freight work largely came to an end), whilst 87101 went to work for [Railfreight Distribution](#).

[\[edit\]](#)

[\[edit\]](#)

British Rail Class 87	
	
No.87024 "Lord Of The Isles" in blue livery at Crewe station	
Power type	Electric
Builder	BREL Crewe Works
Build date	1973–1975
Total produced	36
Configuration	Bo-Bo
UIC classification	Bo'Bo'
Wheel diameter	3 ft 9 ¹ / ₄ in (1.149 m)
Locomotive weight	83.30 long tons (84.64 t)
Electric system(s)	25 kV AC
Current collection method	Pantograph
Traction motors	1,250 hp (930 kW) GEC G412AZ
Top speed	110 mph (180 km/h)
Power output	5,000 bhp (3,730 kW)
Tractive effort	58,000 lbf (258 kN)
Train heating	Electric Train Heating
Train brakes	Air
Career	Bulgarian Railway Company
Number	87001–87035, 87101
Axle load class	Route availability 6



A Class 87 hauled express on the WCML in [InterCity](#) livery in 1994



In 1997 [Virgin Trains](#) took over the WCML franchise from British Rail. All 35 Class 87/0 locomotives passed to the [Porterbrook](#) rolling stock company and were leased to Virgin as part of the deal. The locomotives continued to work the same services as before, the only outward indication of the change of ownership being the repainting of the locomotives in the red Virgin Trains livery. However, the Virgin policy of introducing a new fleet of trains inevitably meant that the writing was on the wall for the 87s. In 2003, No.87005 *City Of London* was the first locomotive taken out of service, and although withdrawals were slower than expected due to the unreliability of the Pendolinos, the final day in service was set for 10 June 2005, by which time many locomotives had been withdrawn, and others transferred to other operators. On this day, four locomotives hauled special trains to [Wolverhampton](#), [Northampton](#) and Manchester. However, this turned out not to be the final workings for Virgin, as further problems with the new trains meant sporadic appearances by Class 87s hired from other operators. The final working, between London and Birmingham, eventually occurred on 22 December 2006; 87002 performing the honours.



No.87005 *City of London* at [London Euston](#) in 2003. The locomotive is painted in Virgin Trains' red and black livery.

EWS

[[edit](#)]

[EWS](#) inherited the unique No.87101 from [Railfreight Distribution](#). The locomotive was used infrequently on freight and charter trains but suffered a major failure in 1999 and was withdrawn due to its non-standard nature. It was eventually sold to [Alstom](#) for spare parts, and finally scrapped at [Barrow Hill](#) by [HNRC](#) in 2002.

Cotswold Rail

[[edit](#)]

In April 2005, [Cotswold Rail](#) acquired three locomotives, all of which had been out of service for a number of months. The fleet later grew to eight, and were intended to work charter trains, for spot-hire contracts and a new possible intermodal traffic flow. They were based at [Oxley](#) depot in [Wolverhampton](#). However the fleet saw very little use, only two ever worked a train (87007 and 87008) both were repainted into Cotswold Rail livery, and in July 2006 the locomotives went off-lease. Cotswold Rail is no longer in existence.

Direct Rail Services

[[edit](#)]

In November 2004, [Direct Rail Services](#) (DRS) acquired four locomotives. They were used on Anglo-Scottish intermodal services, but never on a regular basis. In June 2005, the four locomotives were stored. The main reason for their lack of use was the need for a diesel to shunt the train in non-electrified sidings.

FirstGBRf

[[edit](#)]

In November 2004, [FirstGBRf](#) acquired two locomotives which had recently been retired from Virgin passenger service. They were used as standby locomotives to rescue failed [Class 325](#) units working FirstGBRf parcels trains. The fleet increased to four at one point, but finally consisted of two locomotives, No.87022 *Cock O' The North*, and No.87028 *Lord President*, which were both withdrawn at the end of 2007. What was to have been their final working, a charter train on 29 December 2007, was cancelled.

Bulgaria export

[[edit](#)]

In 2006, Singapore trading company Romic-Ace International PTE Ltd approached Porterbrook to discuss the potential export of the Class 87 locomotives to a customer in Eastern Europe. Nos 87012 and 87019 were purchased and sold to [BRC](#), an open access operator in [Bulgaria](#) by Romic-Ace after preparation for export by Electric Traction Services Limited (ETS). The transfer did not take place until after Bulgaria's accession to the [European Union](#) the following year in order to minimise customs formalities.

Following successful trials and homologation by the state railways, a further 25 locomotives (the entire fleet, minus five that have been scrapped, two already in Bulgaria and the four locomotives preserved or staying in the UK) were purchased from Porterbrook by Romic-Ace and sold to the [Bulgarian Railway Company](#) (БЖК/BRC) in seven batches with the refurbishment being carried out by ETS at Long Marston. The locomotives were then moved to Crewe for 25 kV testing and sign off. The project involved the supply of the locomotives, spares, drawings, overhaul documents and the provision of driver/staff training, which was provided by ETS in the UK and Bulgaria on behalf of Romic-Ace.

The locomotive batches were scheduled to be exported in stages over the period 2008-2010. The first batch, locos 87007, 87008 and 87026, were prepared by Electric Traction Services Limited, and left the UK in June 2008 after testing and sign off by Romic-Ace and BRC at Crewe.^[2] The locomotives were delivered by rail via the Channel Tunnel. Subsequent batches of locomotives have been delivered by road to Hull, then ferry and barge to the port of Ruse in Bulgaria.

17 locomotives are in service with Bulgarian Railway Company.^[3]

Preservation

[[edit](#)]

Three Class 87 electric locomotives are currently preserved in Britain.

- 87001 *Stephenson/Royal Scot*** was donated to the [National Railway Museum](#) in November 2005.^[4]
- 87002 *Royal Sovereign*** is preserved by the [AC Locomotive Group](#), and has been returned to main line running conditions.^[5]
- 87035 *Robert Burns*** was the first locomotive to be preserved. It is based at [Crewe Heritage Centre](#). It was handed over for preservation by owners Porterbrook at Crewe Works Open Day on 10 September 2005.



87001 at the National Railway Museum

Numbers	Name	Livery	Location	Status
87001	Stephenson Royal Scot	British Rail Blue	National Railway Museum	Static display
87002	Royal Sovereign	British Rail Blue	Willesden depot	Operational (mainline registered)
87035	Robert Burns	British Rail Blue	Crewe Heritage Centre	Static display

References

[[edit](#)]

1. [^] [Class 87 history](#) [↗] AC Locomotive Group - Retrieved on 2007-07-28
2. [^] [First three 87s almost ready](#) [↗] Electric Traction Services Limited, retrieved on 2008-04-17
3. [^] http://www.railfaneurope.net/list/bulgaria/bulgaria_bzk.html [↗] - Railfaneurope.net
4. [^] <http://www.nrm.org.uk/> [↗] - 87001 NRM collection page
5. [^] [87002 page](#) [↗] AC Locomotive Group, retrieved on 2008-04-27

External links

[\[edit\]](#)

- [The AC Locomotive Group](#) [↗]
- [Class 87 - The Junction](#) [↗]



Wikimedia Commons has media related to: *[British Rail Class 87](#)*


v · d · e	British railway locomotives and miscellany, 1948 to present	[hide]
Diesel shunters	01 · 01/5 · 02 · 03 · 04 · 05 · 06 · 07 · 08 · 09 · 10 · 11 · 12 · 13 · 14	
Diesel shunters (pre-TOPS)	11001 · 11104 · 15107 · 13000 · D1/1 · D1/2 · D1/3 · D1/4 · D2/1 · D2/2 · D2/3 · D2/4 · D2/5 · D2/6 · D2/7 · D2/8 · D2/9 · D2/10 · D2/11 · D2/12 · D3/1 · D3/2 · D3/3 · D3/4 · D3/5 · D3/6 · D3/7 · D3/8 · D3/9 · D3/10 · D3/11 · D3/12 · D3/13 · D3/14	
Main-line diesels:	15 · 16 · 17 · 18 · 20 · 21 (I) · 21 (II) · 22 (I) · 23 · 24 · 25 · 26 · 27 · 28 · 29 · 30 · 31 · 33 · 35 · 37 · 38 · 40 · 41 (I) · 41 (II) · 42 · 43 (I) · 43 (II) · 44 · 45 · 46 · 47 · 48 (I) · 48 (II) · 50 · 51 · 52 · 53 · 55 · 56 · 57 · 58 · 59 · 60 · 61 · 62 · 65 · 66 · 67 · 70 (II)	
Main-line diesels (pre-TOPS)	10000-10001 · 10100 · 10201-10203 · 10800 · D8/1 · D8/2 · D10/1 · D10/2 · D10/3 · D11/1 · D11/2 · D11/3 · D11/4 · D11/5 · D12/1 · D12/2 · D12/3 · D13/1 · D14/1 · D14/2 · D15/1 · D15/2 · D16/1 · D16/2 · D17/1 · D17/2 · D20/1 · D20/2 · D22/1 · D22/2 · D23/1 · D25/1 · D27/1 · D33/1 ·	
Electrics	22 (II) · 70(I) · 71 · 72 · 73 · 74 · 75 · 76 · 77 · 80 · 81 · 82 · 83 · 84 · 85 · 86 · 87 · 88 · 89 · 90 · 91 · 92 · 93	
Electrics (pre-TOPS)	AL 1 · AL 2 · AL 3 · AL 4 · AL 5 · AL 6 · EB1 · EE1 · EF1 · EM1 · EM2 · ES1 · HA · HB · JA · JB	
Departmental	97 · 97/6 · Eastern · Southern · Other Series	
Prototypes	15097-15099 · 18000 · 18100 · D0226/D0227 · D0260 · D0280 · D9998 · DHP1 · DP1 · DP2 · GT3 · HS4000 · Janus/Taurus ·	
Ships	99	
Lists: Diesel locomotives · Electric locomotives · Miscellaneous locomotives · Diesel multiple units · Electric multiple units · Departmental multiple units		

Rate this page

[View page ratings](#) 

What's this?

 Trustworthy

 Objective

 Complete


 Well-written









 I am highly knowledgeable about this topic (optional)

[Submit ratings](#)

Categories: [Bo-Bo locomotives](#) | [BREL locomotives](#) | [British Rail electric locomotives](#) | [25 kV AC locomotives](#) | [Railway locomotives introduced in 1973](#)

This page was last modified on 19 September 2011 at 21:34.

Text is available under the [Creative Commons Attribution-ShareAlike License](#); additional terms may apply. See [Terms of use](#) for details. Wikipedia® is a registered trademark of the [Wikimedia Foundation, Inc.](#), a non-profit organization.

[Contact us](#)

[Privacy policy](#) [About Wikipedia](#) [Disclaimers](#) [Mobile view](#)

